



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/785,086

02/25/2004

Shan-An Yang

251812-1150

8531

24504

7590

06/10/2009

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP  
600 GALLERIA PARKWAY, S.E.  
STE 1500  
ATLANTA, GA 30339-5994

EXAMINER

FARAGALLA, MICHAEL A

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

06/10/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/785,086	<b>Applicant(s)</b> YANG ET AL.	
	<b>Examiner</b> MICHAEL FARAGALLA	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-15,18-22 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1,4-15,18-22 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the amendment filed by applicant on 03/11/2009.

This action is made **FINAL**.

### ***Response to Arguments***

2. Applicant's arguments with regards to claim 1 filed 03/11/2009 have been fully considered but they are not persuasive.

Regarding the argument of applicant that Tsien et al do not show the limitation of "wherein the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets". However, as shown in abstract; paragraphs 37 and 38; figure 2, Tsien et al discuss adjusting of transmission rate, in order to help determine the adjustment of transmission rate, the transmission ratio is calculated which is the ratio of packets received to packets transmitted. Therefore, Examiner contends that the Tsien reference discloses the argued limitation.

Further, regarding the combination of references, Examiner would like to point out that Tsien reference as well as Boer and Girardeau discloses a method for

Art Unit: 2617

adjusting transmission rate, therefore, the references can be combined in order to show obviousness of the claimed invention with respect to prior art.

***Declaration Pursuant to 37 CFR 1.131***

3. Applicant's affidavit filed on 03/11/2009 has been fully considered, however, the affidavit is not sufficient to establish the earlier conception date of October/28/2002 for the following reasons:

Conception:

The affidavit or declaration and exhibits must clearly explain which facts or data applicant is relying on to show completion of his or her invention prior to the particular date. Vague and general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). In re Borkowski, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by applicant.

Art Unit: 2617

Even though the applicant has submitted the Chinese document in order to support the claimed invention. The Examiner cannot check for support of the claims in the submitted document since it is not in English.

### Diligence

The critical period of diligence for a first conceiver but second reducer begins not at the time of conception of the first conceiver but just prior to the entry in the field of the party who was first to reduce to practice and continues until the first conceiver reduces to practice. See MPEP 2138.06.

Boer et al was filed november/27/2002. Applicant claims that the invention was conceived prior to October/28/2002 (there is no specific date for conception), a screen print copy that is prepared by October/28/2002. Then applicant claims that the invention was submitted to Realtek's intellectual property and legal department on December/10/2002 (after filing date of the Boer et al reference). Therefore, applicant did not show diligence during the period of October/28/2002-November/27/2002. Thus, even though applicant was first to conceive the invention, he was second to reduce the invention to practice.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1, 4-8, 10-15, 18, 19, 21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)** and further in view of **Tsien et al (Publication number: US 2003/0166394)**.

Consider **Claim 1**, Boer et al clearly shows and discloses a method for modifying a transmission rate of a wireless communication system comprising a transmitter and a receiver (figure 1), the method comprising:

(a) Transmitting a plurality of transmitted packets at the transmission rate by the transmitter (figure 1; paragraphs 4,6,7,19 and 23).

(b) Receiving a plurality of received packets corresponding to the transmitted packets by the receiver (figure 1; paragraph 19).

Art Unit: 2617

(c) Determining a state parameter according to at least a characteristic determined by the transmitted packets and the received packets (paragraph 19 and 20; abstract); (the state parameter is read as signal quality characteristic).

(d) Modifying the transmission rate according to the state parameter (figure 1; paragraphs 4, 6, 7, 19 and 23; abstract).

(e) Wherein the characteristic is determined according to a number of the transmitted packets and number of the received packets (paragraph 23).

However, Boer et al show modifying the transmission rate but do not specifically show adjusting the transmission rate.

In the same field of endeavor, Girardeau et al clearly show adjusting the transmission rate (abstract; column 2, lines 47-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system (Boer et al; paragraphs 4 and 5).

However, Boer et al as modified by Girardeau et al do not specifically show that the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets.

In related art, Tsien et al show that the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets (see abstract; paragraphs 37 and 38; figure 2); (Tsien et al discuss adjusting of transmission

Art Unit: 2617

rate, in order to help determine the adjustment of transmission rate, the transmission ratio is calculated which is the ratio of packets received to packets transmitted).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Tsien et al into the teaching of Boer et al and Girardeau et al in order to achieve highest data throughput (see Tsien et al; paragraph 3).

Consider **Claim 11**, Boer et al clearly shows and discloses a method for modifying a transmission rate of a wireless communication system comprising a transmitter and a receiver (figure 1), the method comprising:

(a) Transmitting a plurality of first transmitted packets at a first transmission rate and a plurality of second transmitted packets at a second transmission rate by the transmitter (figure 1; paragraphs 4,6,7,19 and 23); (based on signal quality characteristic, the transmission rate is modified. Therefore, the transmission rate before modifying is read as first transmission rate, and the transmission rate after modifying is read as second transmission rate).

(b) Receiving a plurality of first received packets corresponding to the first transmitted packets and a plurality of second received packets corresponding to the second transmitted packets by the receiver (figure 1; paragraph 19).



Art Unit: 2617

(c) Determining a first state parameter according to at least one first characteristic determined by the first transmitted packets and the first received packets (paragraph 19 and 20; abstract); (the state parameter is read as signal quality characteristic).

(d) Determining a second state parameter according to at least one second characteristic determined by the second transmitted packets and the second received packets (paragraphs 19, 20, and 23; abstract); (Boer et al show that modifying a data rate of the transmitter depends at least in part on the signal quality, therefore, the first sent packets are sent at a rate different from the later sent packets).

(e) Modifying at least one of the first and the second transmission rates according to at least one of the first and second state parameters (figure 1; paragraphs 4,6,7,19 and 23; abstract).

(f) Wherein the characteristic is determined according to a number of the transmitted packets and number of the received packets (paragraph 23).

However, Boer et al show modifying the transmission rate but do not specifically show adjusting the transmission rate.

In the same field of endeavor, Girardeau et al clearly show adjusting the transmission rate (abstract; column 2, lines 47-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system (Boer et al; paragraphs 4 and 5).

Art Unit: 2617

However, Boer et al as modified by Girardeau et al do not specifically show that the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets.

In related art, Tsien et al show that the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets (see abstract; paragraphs 37 and 38; figure 2); (Tsien et al discuss adjusting of transmission rate, in order to help determine the adjustment of transmission rate, the transmission ratio is calculated which is the ratio of packets received to packets transmitted).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Tsien et al into the teaching of Boer et al and Girardeau et al in order to achieve highest data throughput (see Tsien et al; paragraph 3).

Consider **Claim 4**, Boer et al clearly show the method of claim 1 wherein the characteristic is determined according to the signal strength of the received packets paragraphs 19 and 20).

**Consider Claim 5**, Boer et al show the method of claim 4 wherein the state parameter is a value corresponding to the signal strength of the received packets (paragraphs 19 and 20).

Art Unit: 2617

Consider **Claims 6**, Boer et al show the method of claim 1 wherein the modifying step is performed according to a comparison result of the state parameter and at least a threshold value (paragraphs 43 and 44).

Consider **Claims 7 and 8**, Boer et al show the method of claim 6, wherein the modifying step further comprises increasing the transmission rate if the state parameter is larger than a first threshold, and further wherein the adjusting step further comprises decreasing the transmission rate if the state parameter is smaller than a second threshold (paragraphs 43 and 44).

Consider **Claims 10 and 22**, Boer et al show the method of claim 1, as well as the method of claim 11 wherein the characteristic is determined according to at least one of the number of times of transmitting the first and the second transmitted packets (paragraph 23); (the characteristic is read as the number of packets received at receiver side).

Consider **Claim 12**, Boer et al show the method of claim 11 wherein the modifying step is performed according to a comparison result of the first state parameter and a first threshold (paragraph 44).

Art Unit: 2617

Consider **Claim 13**, Boer et al show the method of claim 12 wherein the modifying step further comprises increasing at least one of the first and second transmission rates if the first state parameter is larger than the first threshold (paragraph 44).

Consider **Claim 14**, Boer et al show the method of claim 11 wherein the modifying step is performed according to a comparison result of the second state parameter and a second threshold (read as predefined number of packets) (paragraph 23).

Consider **Claim 15**, Girardeau et al show that the method of claim 14 wherein the modifying step further comprises decreasing at least one of the first and the second transmission rates if the second state parameter is smaller than the second threshold (claim 5); (Girardeau et al show that the transmission rate is lowered if the first transmission rate did not give a satisfying error rate).

Consider **Claim 18**, Tsien et al shows the method of claim 11, wherein the second state parameter is a ratio determined by dividing a number of the second received packets with a number of the second transmitted packets (figure 3; paragraph 38); (the process is an iterative process).

Consider **Claim 19**, Boer et al show the method of claim 11 wherein the characteristic is determined according to the signal strength of at least one of the first and the second received packets (paragraphs 19 and 20).

Consider **Claim 21**, Boer et al show the method of claim 11 wherein the first transmitted packets and the second transmitted packets are transmitted by turns (paragraphs 43 and 44).

6. Claims **9 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)** in view of **Tsien et al (Publication number: US 2003/0166394)** and further in view of **Adachi (Publication number: 2001/0022806)**.

Consider **Claims 9 and 20**, Boer et al as modified by Girardeau et al and as further modified by Tsien et al show the method of claim 1, as well as the method of claim 11, but fail to specifically show that the step of determining whether to use a RTS/CTS mechanism according to at least one of the first and second state parameters.

However, in related art, Adachi shows that the step of determining whether to use a RTS/CTS mechanism according to at least one of the first and second state parameters (paragraph 110).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Adachi into the teaching of Boer et al,

Art Unit: 2617

Girardeau et al, and Tsien et al in order to improve the throughput of the network system (Adachi, abstract).

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)**.

Consider Claim 27, Boer et al clearly shows and discloses a method for modifying a transmission rate of a wireless communication system comprising a transmitter and a receiver (figure 1), the method comprising:

(a) Counting a number of transmitted packets within a predetermined time interval, the transmitted packets being transmitted by the transmitter under the transmission rate; counting a number of acknowledgement packets received by the receiver, each of the acknowledgement packets representing a successful transmission of one of the transmitted packets (figure 1; paragraphs 4,6,7,19 and 23); (the number of acknowledgements and number of packets sent is checked in order to determine the number of packets received in error).

(b) Judging whether a relationship between the number of transmitted packets and the number of acknowledgement packets satisfies a predetermined criterion; judging whether the transmission rate reaches a maximum or a minimum transmission rate

Art Unit: 2617

(figure 1; paragraphs 4,6,7,19 and 23); (based on signal quality characteristic, the transmission rate is modified. Therefore, the transmission rate before modifying is read as first transmission rate, and the transmission rate after modifying is read as second transmission rate).

(c) Increasing the transmission rate when the relationship satisfies the predetermined criterion and the transmission rate does not reach the maximum transmission rate; and decreasing the transmission rate when the relationship does not satisfy the predetermined criterion and the transmission does not reach the minimum transmission rate (see paragraph 23); (the rate is shifted up or down based on conditions of channel, which is determined by the number of acknowledgement messages).

However, Boer et al show modifying the transmission rate but do not specifically show adjusting the transmission rate.

In the same field of endeavor, Girardeau et al clearly show adjusting the transmission rate (abstract; column 2, lines 47-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system (Boer et al; paragraphs 4 and 5).

***Allowable Subject Matter***

8. Claims 28 and 29 are allowed.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL FARAGALLA whose telephone number is (571)270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/Michael Faragalla/  
Examiner, Art Unit 2617

06/04/2009